

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) An image signal processor comprising:
 - an input means for inputting an image signal;
 - a camera operation estimating means for estimating a start time and/or a completion time of a camera operation from a movement detected in the inputted image signal and extracting the image signal at the estimated start time and/or the estimated completion time of the camera operation, the camera operation estimating means comprising:
 - a movement detecting means for detecting the movement of the inputted image signal on the basis of movement vectors of pixels corresponding to the inputted image signal; and
 - a second memory for storing previously determined movement, wherein the start time and/or the completion time of the camera operation are decided on the basis of the determined movement of the inputted image signal and an output from the second memory such that:

if the output from the second memory is different from the movement of the inputted image signal and the output indicates no movement, then the start time of the camera operation is estimated, and,

if the output from the second memory is different from the movement of the inputted image signal and the output indicates a movement, then the completion time of the camera operation is estimated;

and

an output means for outputting the extracted image signal.

2. (Previously Presented) The image signal processor according to claim 1, wherein the inputted image signal is composed of frame units.

3. (Original) The image signal processor according to claim 1, further comprising a first memory for storing the inputted image signal, wherein the camera operation estimating means extracts the image signal at the estimated start time and/or the estimated completion time of the camera operation from the first memory.

4. (Canceled)

5. (Previously Presented) The image signal processor according to claim 1, wherein the camera operation estimating means further includes a movement vector number deciding means for deciding a movement vector number for each of the movement vectors obtained from the inputted image signal to determine a movement associated with the camera operation.

6. (Previously Presented) The image signal processor according to claim 1, wherein the movement is determined on the basis of the movement vectors of pixels for each frame unit of the inputted image signal.

7. (Canceled)

8. (Previously Presented) The image signal processor according to claim 1, wherein the previously determined movement is a last detected movement vector.

9. (Canceled)

10. (Previously Presented) The image signal processor according to claim 1, wherein the movement indicates a direction in which the camera operation moves.

11. (Currently Amended) The image signal processor according to claim 1, wherein the camera operation indicates a panning operation in a horizontal direction or a tilting operation in a vertical direction, the horizontal and vertical movement comprising parallel movement, and when a threshold value is reached or the movement vectors are located in the horizontal direction or in the vertical direction more pixels have movement vectors in the same direction, the camera operation estimating means estimates them to be the panning operation or the tilting operation, respectively the camera operation to be the start of the parallel movement.

12. (Previously Presented) The image signal processor according to claim 1, wherein the camera operation is a zooming operation and when the movement vectors are radial, the camera operation estimating means estimates it to be the zooming operation.

13. (Original) The image signal processor according to claim 1, wherein the output means outputs the inputted image signal together with the extracted image signal.

14. (Original) The image signal processor according to claim 13, further comprising a synthesizing means for synthesizing the extracted image signal with the inputted image signal, wherein the output means outputs a synthesized image synthesized by the synthesizing means.

15. (Original) The image signal processor according to claim 14, further comprising a display means for displaying the synthesized image.

16. (Currently Amended) An image signal processing method, executed by a-an image signal processor, the method comprising:

an input step of inputting, by image input part, an image signal;
a camera operation estimating step of estimating a start time and/or a completion time of a camera operation, by a camera operation estimating part, from a movement detected in the inputted image signal and extracting the image signal at the estimated start time and/or the estimated completion time of the camera operation, the camera operation estimating step comprising:

a movement detecting step for detecting the movement of the inputted image signal on the basis of movement vectors of pixels corresponding to the inputted image signal; and

a storing step for storing previously determined movement, wherein the start time and/or the completion time of the camera operation are decided on the basis of the determined movement of the inputted image signal and an output generated based on the storing step such that:

if the generated output is different from the movement of the inputted image signal and the output indicates no movement, then the start time of the camera operation is estimated, and,

if the generated output is different from the movement of the inputted image signal and the output indicates a movement, then the completion time of the camera operation is estimated; and an output step of outputting, by an image output part, the extracted image signal.

17. (Canceled)

18. (Currently Amended) A recording medium capable of being read by a computer on which a program for performing a prescribed process by the computer is recorded; said program comprising:

an input step of inputting an image signal;
a camera operation estimating step of estimating a start time and/or a completion time of a camera operation from a movement detected in the inputted image signal and extracting the image signal at the estimated start time and/or the estimated completion time of the camera operation, the camera operation estimating step comprising:

a movement detecting step for detecting the movement of the inputted image signal on the basis of movement vectors of pixels corresponding to the inputted image signal; and
a storing step for storing previously determined movement,

wherein the start time and/or the completion time of the camera operation are decided on the basis of the determined movement of the inputted image signal and an output generated based on the storing step such that such that:

if the generated output is different from the movement of the inputted image signal and the output indicates no movement, then the start time of the camera operation is estimated, and,

if the generated output is different from the movement of the inputted image signal and the output indicates a movement, then the completion time of the camera operation is estimated; and

an output step of outputting the extracted image signal.

19. (Previously Presented) An image signal processing system comprising:

an image signal processor including an input means for inputting an image signal;

a camera operation estimating means for estimating a start time and/or a completion time of a camera operation from a movement detected in the inputted image signal and extracting the image signal at the estimated start time and/or the estimated completion time of the camera operation, the camera operation estimating means comprising:

a movement detecting means for detecting the movement of the inputted image signal on the basis of movement vectors of pixels corresponding to the inputted image signal; and

a second memory for storing previously determined movement,

wherein the start time and/or the completion time of the camera operation are decided on the basis of the determined movement of the inputted image signal and an output from the second memory such that:

if the output from the second memory is different from the movement of the inputted image signal and the output indicates no movement, then the start time of the camera operation is estimated, and,

if the output from the second memory is different from the movement of the inputted image signal and the output indicates a movement, then the completion time of the camera operation is estimated;

and

an output means for outputting the extracted image signal and a plurality of display devices for displaying the inputted image signal and the extracted image signal.

20. (Previously Presented) The image signal processing system according to claim 19, wherein the image signal processor controls an image signal displayed on each of the display devices from the extracted image signal in accordance with the arrangement of the plurality of display devices.

21. (Canceled)

22. (New) An image signal processor comprising:

an input part for inputting an image signal;

a camera operation estimating part for estimating a start time and/or a completion time of a camera operation from a movement detected in the inputted image signal and extracting the image signal at the estimated start time and/or the estimated completion time of the camera operation, the camera operation estimating part comprising:

a movement detecting part for detecting the movement of the inputted image signal on the basis of movement vectors of pixels corresponding to the inputted image signal; and

a second memory for storing previously determined movement, wherein the start time and/or the completion time of the camera operation are decided on the basis of the determined movement of the inputted image signal and an output from the second memory such that:

if the output from the second memory is different from the movement of the inputted image signal and the output indicates no movement, then the start time of the camera operation is estimated, and,

if the output from the second memory is different from the movement of the inputted image signal and the output indicates a movement, then the completion time of the camera operation is estimated;

and

an output part for outputting the extracted image signal.

23. (New) The image signal processor according to claim 22, wherein the inputted image signal is composed of frame units.

24. (New) The image signal processor according to claim 22, further comprising a first memory for storing the inputted image signal, wherein the camera operation estimating part extracts the image signal at the estimated start time and/or the estimated completion time of the camera operation from the first memory.

25. (New) The image signal processor according to claim 22, wherein the camera operation estimating part further includes a movement vector number deciding part that decides a movement vector number for each of the movement vectors obtained from the inputted image signal to determine a movement associated with the camera operation.

26. (New) The image signal processor according to claim 22, wherein the movement is determined on the basis of the movement vectors of pixels for each frame unit of the inputted image signal.

27. (New) The image signal processor according to claim 22, wherein the previously determined movement is a last detected movement vector.

28. (New) The image signal processor according to claim 22, wherein the movement indicates a direction in which the camera operation moves.

29. (New) The image signal processor according to claim 22, wherein the camera operation indicates a panning operation in a horizontal direction or a tilting operation in a vertical direction, the horizontal and vertical movement comprising parallel movement, and when a threshold value is reached or more pixels have movement vectors in the same direction, the camera operation estimating means estimates the camera operation to be the start of the parallel movement.

30. (New) The image signal processor according to claim 22, wherein the camera operation is a zooming operation and when the movement vectors are radial, the camera operation estimating means estimates it to be the zooming operation.

31. (New) The image signal processor according to claim 22, wherein the output part outputs the inputted image signal together with the extracted image signal.

32. (New) The image signal processor according to claim 31, further comprising a synthesizing part for synthesizing the extracted image signal with the inputted image signal, wherein the output part outputs a synthesized image synthesized by the synthesizing part.

33. (New) The image signal processor according to claim 32, further comprising a display for displaying the synthesized image.

34. (New) An image signal processing system comprising:
an image signal processor including an input part for inputting an image signal;
a camera operation estimating part for estimating a start time and/or a completion time of a camera operation from a movement detected in the inputted image signal and extracting the image signal at the estimated start time and/or the estimated completion time of the camera operation, the camera operation estimating part comprising:
a movement detecting part for detecting the movement of the inputted image signal on the basis of movement vectors of pixels corresponding to the inputted image signal; and
a second memory for storing previously determined movement, wherein the start time and/or the completion time of the camera operation are decided on the basis of the determined movement of the inputted image signal and an output from the second memory such that:
if the output from the second memory is different from the movement of the inputted image signal and the output indicates no movement, then the start time of the camera operation is estimated, and,

if the output from the second memory is different from the movement of the inputted image signal and the output indicates a movement, then the completion time of the camera operation is estimated; and

an output part for outputting the extracted image signal and a plurality of display devices for displaying the inputted image signal and the extracted image signal.

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